

NOTES ON THE MALACHIIDAE

Collops vittatus (Say): It is a matter of economic interest that this species has been taken in large numbers from alfalfa, in the neighborhood of Yuma, Arizona. Occurring with it, in much smaller numbers, were specimens of *C. marginellus* Leconte and *C. femoratus* Schaeffer, but these two species cannot be considered of economic importance, since they are both very limited in distribution, whereas *C. vittatus* is the most widely distributed member of the family in North America. It remains for the economic entomologists to determine what, if any, damage to the alfalfa is produced by this insect. Dr. Donald M. Tuttle, of the Agricultural Experiment Station at Yuma, informs me that "most of the workers in this area classify *C. vittatus* as beneficial." Dr. George D. Butler, Jr., of the University of Arizona, states that he has observed "an adult *Collops*" (probably *C. vittatus*) "voraciously devouring mites on alfalfa" and adds that it is a "big question" where the larvae may be found. The weight of evidence at present seems to be in favor of classing *C. vittatus* as a beneficial, rather than a noxious, insect.

Fall¹, following his description of *C. necopinus*, states: "It possesses very nearly the structural characters of *vittatus* and may be an extreme form of that variable species" and in his key to the species of *Collops*, in the same paper, he separates the two by the fact that in *vittatus* the pale margins of the elytra are entire. In a series of about forty specimens of *vittatus*, from northern Utah, there are several specimens, collected with typical *vittatus*, in which the dark discal vitta invades the lateral margin to a greater or lesser extent. In the darker individuals, the color pattern becomes almost, if not entirely, identical with *C. necopinus* and I am unable to satisfactorily separate them from that species, since the only other distinguishing character, the relative length and width of the second antennal segment in the male, appears to be subject to considerable variation. This observation would appear to lend strength to Fall's suspicion that *necopinus* is a form, probably a subspecies, of *C. vittatus*.

Malachius aeneus (Linnaeus): The occurrence of this introduced species in northern Utah is of definite economic significance, since it is the only member of the family that has been classed as injurious, it having been reported as damaging wheat in Europe, its native habitat. It was formerly known to have extended its range in this country from New England, where it was originally introduced, clear across the southern tier of Canadian provinces, the great wheat belt of the continent, as far as British Columbia. Its presence in northern Utah would seem to justify the statement that it almost certainly occurs also in Montana and Idaho.

The following locality records are in addition to those previously reported: *Collops bridgeri* Tanner, Utah; *Malachius aeneus* (Linnaeus), Utah; *Tanaops malkini* Marshall, Idaho; *Anthocomus mirandus* (Leconte), Idaho; *Attalus futilis* Fall, Utah; *A. difficilis* Leconte, Utah; *A. tucsonensis* Marshall, Utah.

M. Y. MARSHALL, M.D., Murfreesboro, Tenn.

¹Fall, H. C. 1912. A review of the North American species of *Collops*. Journ. New York Ent. Soc. 20: 249-274.